

REMARKS

The objection to the drawing is noted. However, as it only involves insertion of a reference character P/n, the requirement for a proposed drawing correction at this time inserting it is traversed, because consideration and allowance on the basis of a newly claimed limitation, "... a total area of the planar portions is [being] larger than a total planar projection area of the locking projections," that also may have to be shown in the drawing has been requested.

The rejection of claim 1 under 35 USC 112, second paragraph, has been attended to above.

The rejection of claims 17, 19 and 21 under 35 USC 102 for anticipation by the newly cited Giannuzzi patent is traversed, because the patent relates to a self-drilling anchor 31.

The self-drilling anchor 31 is always used together with a mountain screw 19. The teeth 27 formed on the undersurface of head 26 mainly aim to avoid accompanying its simultaneous turning with the mountain screw 19 when the mountain screw 19, once screwed in, is unscrewed. So, it can be said that the teeth 27 of head 26 is different from the locking projection of the present invention which aims to avoid spontaneous loosening of the screw.

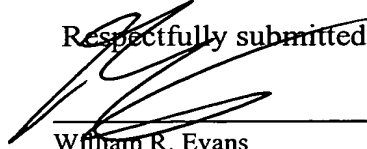
Further, the thread of the Giannuzzi patent is a type of tapping screw and not a type of machine screw as now claimed. So, the value of P/n in the Giannuzzi patent should not be applied to the present invention.

The rejection of claims 18, 21, 22 and 23 under 35 USC 102 for anticipation by the Sigmund patent is traversed by the total surface area of the planar portion relative to a total planar projected surface of the locking recesses that is introduced into independent claims 18 and 23, as well as independent claim 17 considered above. In the Sigmund patent, the total

surface area of the planar portions is smaller than a total planar projected surface of the locking recesses. The opposite is now claimed. The claimed surface of the planar portions is larger than the total planar projected area of the locking recesses.

Reconsideration and allowance are, therefore, requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'William R. Evans', is written over a horizontal line.

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17. (amended) A self-locking bolt having:

a head having a locking function; and

a threaded part extending from the head and provided with an external thread of a pitch P , the external thread being a machine screw;

wherein n locking projections are formed at equal angular intervals on a bearing surface of the head,

the locking projections are separated from one another by planar portions of the bearing surface,

the heights of each the locking projections from the bearing surface of the head increase gradually in a direction opposite a fastening direction in which the bolt head is rotated for fastening to a maximum heights,

an there are edges is formed in a highest portion of the locking projection at the maximum heights,

the heights of the locking projections decrease steeply from the edges in the direction opposite the fastening direction, and

the maximum heights of the edges of the locking projection from the bearing surface of the head is nearly are equal to and or less than P/n , and

a total area of the planar portions is larger than a total planar projected area of the locking projections.

18. (twice amended) A self-locking bolt having:

a head having a locking function; and

a threaded part extending from the head and provided with an external thread of a pitch P, the external thread being a machine screw;

wherein n locking recesses are formed at equal angular intervals in a bearing surface of the head,

the locking recesses are separated from one another by planar portions of the bearing surface,

depths of each the locking recesses from the bearing surface of the head decreases gradually in a direction opposite a fastening direction in which the bolt head is rotated for fastening to a minimum depths, and an

there are edges is formed at the joints of an end walls of the locking recesses at a positions of at a maximum depths from and the bearing surface of the head,

wherein when the bearing surface compresses a member contacting the bearing surface, the edges function so that a portion of the member is forced to bulge into at least one of the locking recesses in a small protrusion, and

a total area of the planar portions is larger than a total planar projected area of the locking projections.

23. (amended) A self-locking bolt comprising:

a head having a bearing surface; and

a threaded part extending from the bearing surface and provided with an a machine screw external thread of a pitch P for fastening to a first member when the head and threaded part are rotated in a fastening direction,

wherein there are n locking recesses at equal angular intervals in about the bearing surface, spaced from one another by planar portions and

wherein depths of the locking recesses from the bearing surface decrease gradually in a direction opposite the fastening direction from maximum depths to minimum depths with edges of the locking recesses at junctions of the bearing surface and end walls of the locking recesses at the maximum depths of the locking recesses for bulging into the locking recesses protrusions of a second member that is between the bearing surface and the first member when the head and threaded part are rotated in the fastening direction, and

wherein a total area of the planar portions is larger than a total planar projected area of the locking projections.